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Cancer has been the leading cause of death among New Jersey adults aged 45-64 since 1983 and the second leading cause of death among New Jersey residents in general since 1921. Colorectal cancer and breast cancer together currently account for about 20% of all cancer deaths and about 30% of cancer deaths among women in New Jersey<sup>1</sup>. The United States Preventive Services Task Force (USPSTF) has identified colorectal cancer and female breast cancer, in addition to cervical cancer, as diseases for which available evidence suggests that routine screening in a clinical setting can effectively improve survival<sup>2</sup>. The New Jersey Behavioral Risk Factor Surveillance System (BRFSS) provides an opportunity to estimate directly the extent of cancer screening activities targeted towards these three types of cancer among New Jersey adults.

NOTE: The New Jersey Behavioral Risk Factor Surveillance System is part of the national Behavioral Risk Factor Surveillance System, a telephone survey of adults aged 18 years and over. This survey is designed to monitor modifiable risk factors for chronic diseases and other leading causes of morbidity and death. The survey is a cooperative effort between the national Centers for Disease Control and Prevention (CDC) and all states, the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands. It has been in existence since 1984. The New Jersey Department of Health and Senior Services has been participating in the survey since 1991, collecting approximately 125 interviews per month through 1995 and nearly twice that number in 1996. General design features and limitations of the BRFSS have been discussed elsewhere.<sup>3,4</sup>

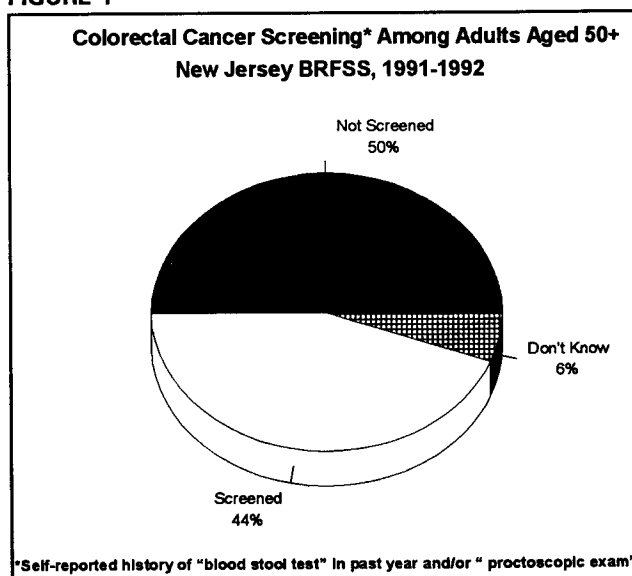
#### Fecal Occult Blood Testing and/or Sigmoidoscopy

Colorectal cancer deaths currently account for about 12% of all cancer deaths among both females and males in New Jersey<sup>1</sup>. The risk of colorectal cancer rises sharply after age 35, with 90% of such cancers occurring in persons 50 years and older<sup>5</sup>. The most recent USPSTF guidelines recommend the use of annual fecal occult blood testing (FOBT) and/or periodic flexible sigmoidoscopy for persons in this latter age group. Existing evidence suggests that perhaps one-third to one-half of colorectal cancer deaths might be prevented by use of this screening regimen<sup>2</sup>.

During 1991 and 1992, the New Jersey BRFSS included questions about colorectal cancer screening covering both FOBT ("blood stool testing") and sigmoidoscopy

("proctoscopic exams"). Less than half of New Jersey adults aged 50 and over were screened in accordance with current USPSTF recommendations in 1991-1992, according to the New Jersey BRFSS (Figure 1). In general, older adults were more likely to be screened than younger individuals, but there was substantial variability associated with both gender and marital status, with males more likely to report being screened than females, and married individuals more likely to report being screened than unmarried (including divorced, widowed, or separated) individuals. Among adults aged 70 years and over, approximately two-thirds (51.9% to 75.2%\*) of all

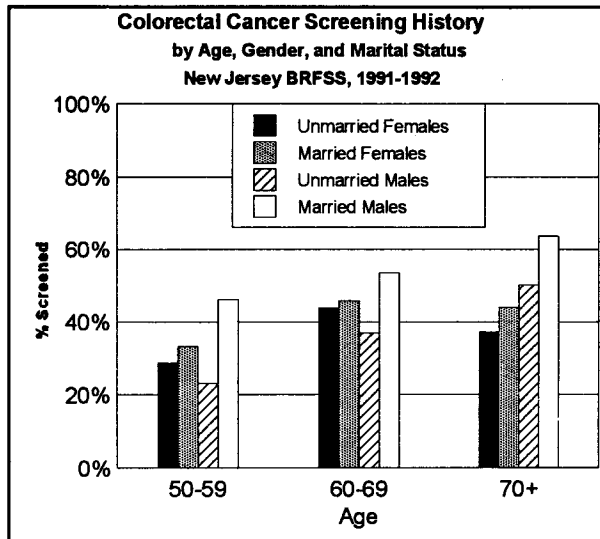
FIGURE 1



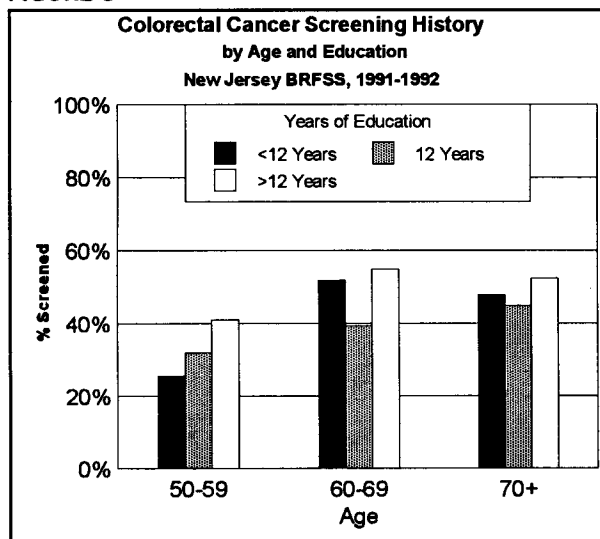
married males reportedly met the USPSTF guidelines, while only about one-third (28.0% to 46.5%) of unmarried females in this age group reportedly met the guidelines (Figure 2). Self-reported colorectal cancer screening among adults aged 50 and over also varied by educational status, according to the BRFSS, with persons having only a high school education or less appearing to be least likely to undergo screening, particularly at younger ages (Figure 3). Lack of health insurance was also a substantial risk factor among those under age 65. However, multivariable analyses (not shown) suggest that disparities in screening

practices among persons of different educational backgrounds persist regardless of age, gender, marital status, health insurance status, household income, or self-reported race/ethnicity.

**FIGURE 2**



**FIGURE 3**



Questions about sigmoidoscopy (but not FOBT) were also included in the New Jersey BRFSS in 1993 and 1995. The available data do not show a consistent increase in the use of sigmoidoscopy during this time period in New Jersey among persons aged 50 and over<sup>6-8</sup>. Also, the limited data available for national comparisons suggest that the usage of sigmoidoscopy among persons aged 50 and over is not substantially different from the median for all reporting states<sup>7-8</sup>.

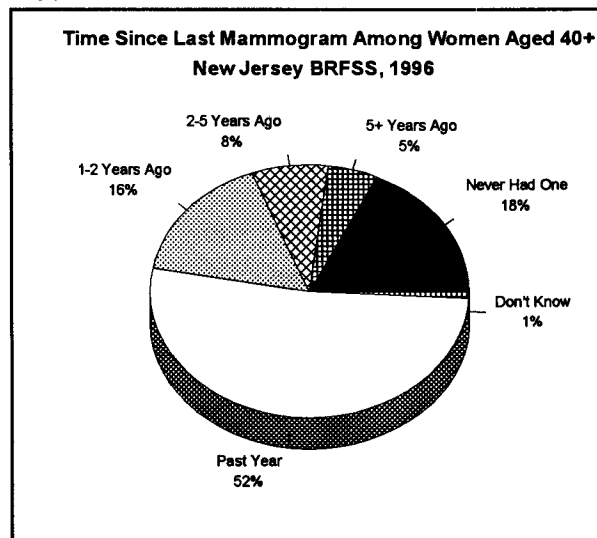
#### Mammography with or without Clinical Breast Exam

Breast cancer deaths currently account for about 9% of all cancer deaths and about 17% of cancer deaths among women in New Jersey. Among younger women, however, breast cancer deaths make up a somewhat greater proportion of all cancer deaths than among older women<sup>1</sup>. The risk of breast cancer among women in the United States is known to rise sharply with age until menopause, and then more gradually after that<sup>9</sup>. Available evidence suggests that the use of screening mammography every one to two years, with or without a clinical breast exam, might prevent 20-30% of breast cancer deaths among women aged 50-69<sup>2</sup>.

The New Jersey BRFSS has been collecting information on the use of both mammography and clinical breast exams among women of all ages continuously since its inception. Mammography utilization rates based on self-report may be overestimated<sup>10</sup>. Nevertheless, such information can serve to identify sociodemographic patterns and time trends for program planning purposes.

Approximately one-third (28.0% to 34.4%) of New Jersey women aged 40 and over have not had a mammogram within the past two years, according to the most recent data from the New Jersey BRFSS (Figure 4). Moreover, older women are less likely to undergo

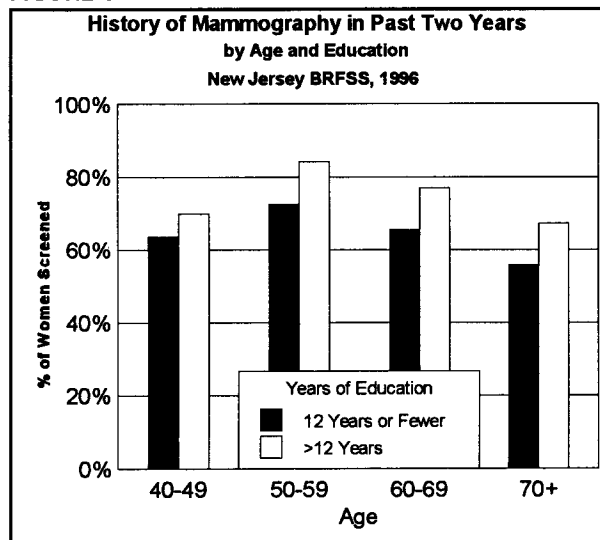
**FIGURE 4**



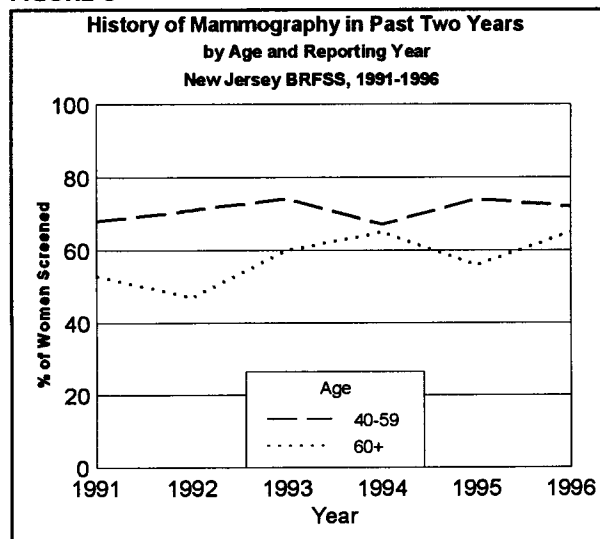
mammography than younger women, despite being at higher risk of breast cancer. Also, women with a high school education or less are consistently less likely to undergo mammography than women with a higher education level, at all ages (Figure 5). These results are consistent with data from national studies, which also suggest that low income and Hispanic ethnicity are independent predictors of mammography underutilization<sup>11</sup>.

Available data suggest that there has been a slight increase in mammography utilization between 1991 and 1996 in New Jersey (Figure 6). However, self-reported use of mammography by women in New Jersey has been consistently lower than the median for all reporting states over this same time period<sup>6-8,12-14</sup>.

**FIGURE 5**



**FIGURE 6**



#### Papanicolaou Smear

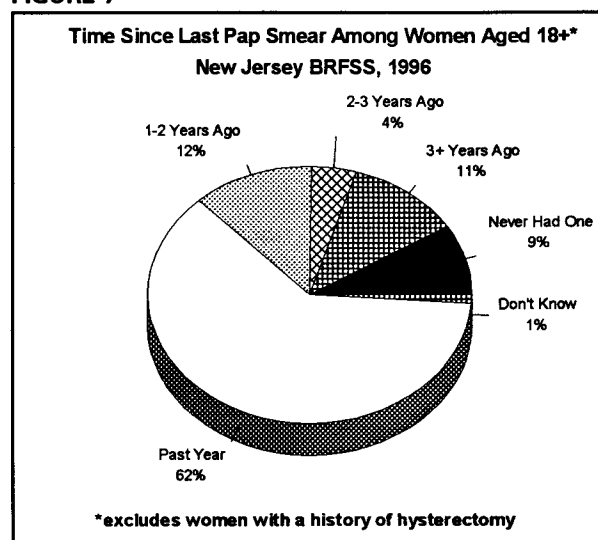
Cervical cancer currently accounts for less than 2% of all cancer deaths among women in New Jersey<sup>1</sup>. Nevertheless, these deaths are of particular public health concern because they are largely preventable. The risk of cervical cancer, which is believed to be primarily caused by heterosexual transmission of human papilloma viruses, rises

sharply with age in the United States from about age 20 to about age 40, after which it flattens out considerably<sup>15</sup>. Available evidence suggests that screening by Papanicolaou (Pap) testing every three years might reduce the risk of invasive cervical cancer among women aged 20-64 by about 90%<sup>2</sup>.

The New Jersey BRFSS has been collecting information on the use of Pap smears as well as hysterectomy status among all females aged 18 and over continuously since its inception. However, collection of information on sexual behavior, a critical indicator of cervical cancer risk, was not initiated until 1997.

Approximately 20% (18.8% to 21.3%) of women with intact uteri report not having had a Pap smear within the past three years, and nearly 10% (7.4% to 11.3%) have never had one, according to the most recent data from the New Jersey BRFSS (Figure 7). Pap smear utilization in New Jersey declines with age and increases with education level in a manner that is consistent with national data<sup>11</sup>.

**FIGURE 7**



Available data do not show a consistent increase in Pap smear usage among New Jersey women between 1991 and 1996. In addition, reported Pap smear usage in New Jersey has been consistently below the median for all reporting states during this time period<sup>6-8, 12-14</sup>.

\*Prevalence estimates given as ranges in this report represent approximate 95% confidence intervals for the underlying population-based statistics, taking into account the random error introduced by sampling. These confidence intervals were calculated from variance estimates generated by the statistical software package SUDAAN, used for surveys such as the BRFSS which incorporate complex sampling designs<sup>16</sup>.

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